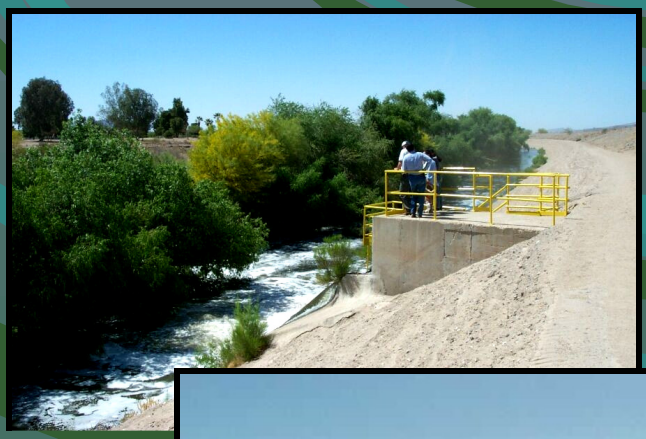
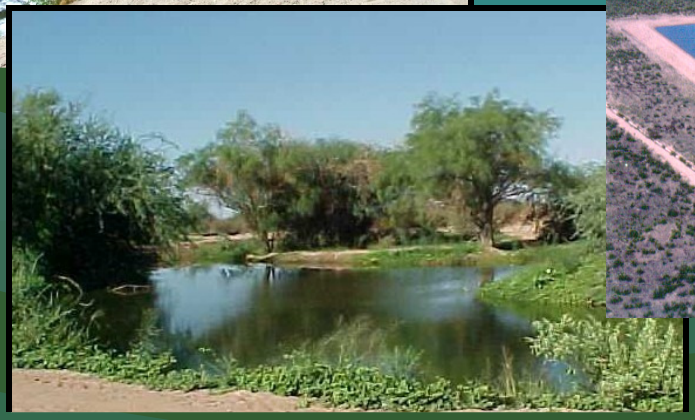
ADWR
ARIZONA DEPARTMENT OF WATER RESOURCES

SECURING ARIZONA'S WATER FUTURE

Underground Water Storage, Savings and Replenishment Program

Underground Storage Facility Permit
Application Guide





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Underground Water Storage, Savings and Replenishment Program

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Application forms, links to referenced statutes and agencies, and additional information regarding the UWS Program may be found at www.azwater.gov/recharge.

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SECTION I – GENERAL INFORMATION

A. INTRODUCTION

Underground Storage Facility (USF) permits are issued in accordance with the Underground Water Storage, Savings and Replenishment Program in Arizona Revised Statutes (A.R.S.) § 45-801.01 *et seq.* A USF permit issued pursuant to A.R.S. § 45-811.01 grants the permit holder authority to operate a USF for the storage of water pursuant to a Water Storage permit. This guide provides information on the USF permit application process and assistance in completing the USF permit application form. Applicants may contact the Department if additional assistance or information regarding the application process is needed.

1. Pre-Application Meetings

The Department recommends all potential applicants meet with Department staff before submitting a USF permit application. The pre-application meeting provides an opportunity to present and discuss proposed projects and to receive guidance from the Department. The pre-application meeting is for discussion purposes only. Applicants are notified of any determinations in writing only after an official application is submitted and reviewed by Department staff.

2. Whom to Contact to Schedule Meetings

The Recharge Coordinator may be contacted to schedule a pre-application meeting. Prior to the scheduled meeting, the Recharge Coordinator will provide the applicant with a checklist of items to bring to the meeting. Applicants who have identified questions they want to discuss at the meeting should submit their questions to the Recharge Coordinator prior to the scheduled meeting to allow Department staff to prepare appropriately.

B. APPLICATION SUBMITTAL

1. Filing an Application

A USF permit application form (see Appendix A of this Application Guide for a sample) must be completed to apply for a new USF permit or to modify or renew an existing USF permit. Application forms are available from the Recharge Coordinator and at AMA offices or they may be printed from www.azwater.gov/recharge. All applicable supporting evidence requested on the application form must be included in the submittal. To convey a USF permit, please refer to the UWS Permit Conveyance Application Guide. The application fee and one original plus three copies of the USF permit application form and all supporting evidence must be submitted to the Recharge Coordinator at the address noted on the application form. The application form must be signed by the applicant and notarized.

In order to implement a contingency that is specific in nature and was included as a condition of an existing USF permit, no permit modification application, fee or public notice is required. All other contingencies may only be implemented through a USF permit modification and may be subject to fees and/or public notice as described in Sections I.B.2 (page 2) and I.C.3 (page 3) of this Application Guide.

2. Fee Schedule

Fees are assessed in accordance with A.R.S. § 45-871.01(A) and Arizona Administrative Code (A.A.C.) R12-15-151(B). The following fee schedule pertains to USF applications and permits, including the modification or renewal of USF permits.

Underground Storage Facility Permit Application……	$ 750.00
Underground Storage Facility Permit……..……..	$ 500.00
Public Notice…….	Assessed after Public Notice Based on Actual Costs.

a. Exceptions to Fees for Permit Modifications

Permit modification and renewal applications require the same fees as new USF permit applications (as described above); however, there are limited circumstances when fees for modifications are waived. Permit and application fees are not assessed for the following modifications:

- Corrections of clerical errors or omissions caused by the Department.
- Information called for in the permit, limited to filling in blank sections of permit tables, *e.g.*, well registry numbers.
- Changes to measuring equipment in accordance with the measuring device accuracy rules A.A.C. R12-15-905, as long as the method of measuring has not changed.
- Changes to a permit that are required by a change in ADWR rule or statute unless a new fee is required by law.

3. Filing an Application to Renew a USF Permit

USF Permittees who want to continue facility operations after their permit is scheduled to expire may apply for a renewal of their permit. As provided in A.R.S. § 41-1092.11, if the application is submitted prior to the expiration of the existing permit and satisfies all the preliminary submittal requirements, *i.e.* includes the appropriate fees and one original plus three copies of the correct, signed and notarized, application form, the existing permit will not expire until the Department makes a final determination on the renewal application. If the renewal application is denied or the terms of the renewal are limited, the existing permit is effective until the conclusion of the administrative appeal process. If the permit holder does not file a timely renewal application that meets all the preliminary submittal requirements, a new application for a USF permit will be required and operations pursuant to the existing permit must cease when the permit expires.

C. LICENSING TIMEFRAMES

The licensing timeframes for the permit application process are set forth in A.A.C. R12-15-401. The timeframes consist of a 100-day administrative completeness review timeframe and a 195-day substantive review timeframe, which combine to form the overall timeframe of 295 days. The licensing timeframes pertain to new USF permit applications, as well as permit modifications and renewals.

1. Overall Timeframe

The overall timeframe, 295 days, is the number of days after receipt of an application during

which the Director must determine whether to grant or deny the application. The overall timeframe consists of both the administrative completeness review timeframe and the substantive review timeframe. The overall timeframe will be extended if the applicant receives a letter from the Department during the administrative completeness review or substantive review timeframes requesting additional information or if a hearing is held. Therefore, the 295 days may not reflect the actual time it will take for the Department to grant or deny an application for a USF permit.

2. Administrative Completeness Review Timeframe

During the 100-day administrative completeness review timeframe, the Department must determine whether the submittal contains all the information required for a complete and correct application. The 100-day administrative completeness review timeframe begins upon receipt of an application that satisfies all of the preliminary submittal requirements. These requirements include the submittal of the application fees and one original plus three copies of the correct, signed and notarized, application form. All supplemental materials requested in the application must be included in the submittal. If an application that does not include all major application components is submitted to the Department, the applicant will be notified by phone and given 10 calendar days, or longer by mutual agreement between the applicant and the Department, to submit the missing information. If the information is not submitted within that time, the original submittal, including fees (if submitted), will be returned to the applicant unprocessed.

a. Incomplete and Incorrect Determination

Pursuant to A.R.S. § 45-871.01(B), if the Director determines the application is incomplete and incorrect, the applicant will be notified in writing and will be provided a comprehensive list of deficiencies found in the application. At this time, the administrative completeness review and overall timeframes are suspended. The applicant will have 60 days to respond to the Department's request for additional information. Once the applicant submits the requested information, the timeframes resume and 15 days are added to the timeframes. The Department may deny the application if the re-submittal is not received within 60 days or if the re-submittal does not address all deficiencies listed in the incomplete and incorrect letter. The applicant may contact the Recharge Coordinator to schedule a meeting or conference call to discuss with staff any questions or concerns regarding the incomplete and incorrect letter.

b. Complete and Correct Determination

An application is deemed complete and correct when all of the information requested in the application has been submitted. Once an application is determined to be complete and correct, the applicant is notified in writing of the determination. The date of the complete and correct letter begins the substantive review timeframe.

3. Substantive Review Timeframe

The 195-day substantive review timeframe begins once the application is determined to be complete and correct. The substantive review timeframe includes the public notice period, the objection period, and the Director's review of the application to determine whether the application should be granted or denied. In cases where a pre-determination hearing is necessary, an additional 120 days are added to the timeframe. **All permit and public notice fees must be paid during the substantive review timeframe.**

During the substantive review timeframe, the Department may make one written request for

additional information. If the Department makes such a request, the substantive review timeframe and the overall timeframe are suspended from the date the request is issued until the date the applicant submits the requested information. By mutual written agreement between the applicant and the Department, the substantive review time period may be extended up to an additional 74 days (25% of the overall timeframe).

a. State Demonstration Projects

Pursuant to A.R.S. § 45-871.01(H), the substantive review and overall timeframes for State Demonstration Projects are 105 and 205 days, respectively. (The Administrative Completeness Review Timeframe for State Demonstration Projects remains at 100 days.)

b. Public Notice

Pursuant to A.R.S. § 45-871.01(D), within 15 days of the complete and correct determination, or a longer period if requested by the applicant, the Director must give notice of the application once per week for two consecutive weeks in a newspaper of general circulation in the county or counties in which persons reside who could reasonably be expected to be affected by the water storage. Any city, town, private water company, irrigation district, or electrical district that serves land within the area of impact of the stored water will be notified by first class mail. The applicant will be notified in writing of the name of the newspaper, publication dates, and the date when the objection period ends. Objectors will be given 15 days after the last publication date to object in writing to the proposed storage facility. Objections must be based on the assertion that the application does not meet the requirements specified in A.R.S. § 45-801.01 *et seq*.

c. Exceptions to Public Notice for Permit Modifications and Renewals

Permit modifications and renewals are subject to public notice under A.R.S. § 45-871.01(D). However, only the modification or renewal is subject to objection. The following are limited conditions when public notice is not required for modifications:

- Corrections of clerical errors or omissions caused by the Department that do not affect the substance of the permit.
- Providing information called for in the permit, limited to filling in blank sections of permit tables, *e.g.*, well registry numbers.
- Changes to measuring equipment in accordance with the measuring device accuracy rules A.A.C. R12-15-905, so long as the method of measurement has not changed.
- Replacement of monitor wells or piezometers within 660 feet of the original monitor well or piezometer location and built to the same well construction specifications. Note that form 55-40A for a Notice of Intention to Drill, Deepen or Modify a Monitor/Piezometer/Environmental Well must be filed for each monitor well or piezometer replacement.
- Addition of wells to the monitoring plan.
- Decrease of the permit volume.
- Decrease of the permit duration.
- Decrease of the facility size and/or associated lands, if the modification contains no new components.

d. Initial Draft Permit

If the Director decides to issue a permit, the Department may send a copy of an Initial Draft Permit to the applicant for review prior to issuing a formal decision to grant the application and issue a permit. The applicant will have up to 15 business days to submit comments to

the Department, depending on the time remaining in the substantive review timeframe.

e. Notice of Decision on Application

The Director will send written notice, via certified mail, to the applicant either granting or denying the permit application. Written notice will also be sent to any person who filed a timely objection to the application. If the Director grants the permit application, the notice will include the Final Appealable Draft Permit along with the Department's response to any comments submitted by the applicant on the Initial Draft Permit. If timely objections to the application were not filed, the notice will also include a Notice of Appeal form and an Appealable Agency Action Waiver form. The applicant may appeal the permit within 30 days, or waive the right to appeal by signing the waiver form. If the applicant waives the right to appeal, the signed permit will be issued without delay. If a timely objection was filed, the Department will send a Notice of Appeal form to both the applicant and the objector. If an appeal is not filed within the 30-day appeal period, the Department will issue a signed permit after the appeal period expires. If a timely appeal is filed, the Department will schedule an administrative hearing on the appeal at the Office of Administrative Hearings. If the Director denies the permit application, the notice will include the justification for the denial and an explanation of the right to appeal the denial.

D. PRE-RECHARGE SITE INSPECTIONS

Pre-recharge site inspections for permitted USFs are conducted by the Department to ensure that all equipment necessary to operate and monitor the facility is installed as required in the USF permit and as supported by the application. This inspection provides information on the status of the permitted facility prior to the commencement of recharge operations. As a condition of the permit, the Department must be contacted at least 30 days prior to the commencement of recharge to arrange the pre-recharge site inspection. Typically, the site inspection will consist of the measurement of water levels in all water level monitor wells and GPS location of all monitoring points. Photographs may be taken of any facility component.

1. Pre-Recharge Inspection Report

A Pre-Recharge Inspection Report will be prepared by the Department and sent to the permittee within 30 days of the inspection. The report will include the measurements taken during the site inspection and any deficiencies that may need to be resolved. If no deficiencies are found at the inspection, notice that facility operations may begin will be provided in the report. If deficiencies are found at the inspection, upon approval of the additional information requested in the report, the permittee will receive written notification from the Department that facility operations may begin. If the facility as constructed fails to meet the conditions of the USF permit, (*e.g.* a monitor well was constructed in an incorrect location), the permittee may be required to modify the USF permit prior to commencing recharge. The modification process follows the same administrative process as a USF permit application.

SECTION II - COMPLETING THE APPLICATION FORM

A sample copy of the USF permit application form may be found in Appendix A of this Application Guide. Application forms are available from the Recharge Coordinator and at AMA offices or they may be printed from www.azwater.gov/recharge.

A. FACILITY DESIGN

There are two different types of USF projects, managed and constructed. A constructed USF allows water to be stored in an aquifer by using some type of constructed device, such as a vadose zone recharge well or percolation basin. A managed USF allows water to be discharged to a streambed where the water percolates into the aquifer without the assistance of any constructed devices.

B. TYPE OF UNDERGROUND STORAGE FACILITY APPLICATION

1. Underground Storage Facility

A new constructed or managed recharge project.

2. Modification of an Underground Storage Facility Permit

A modification may include nearly any type of change to a permit that is not a renewal.

3. Renewal of an Underground Storage Facility Permit

A permit renewal extends the duration and volume of the permit with the same terms and conditions as the original permit. Modifications and renewals may be applied for simultaneously, thereby changing the terms and conditions of a permit and extending the permit duration.

4. When a Modification or Renewal is Considered a New Project

Changes to an existing project that require an application for a new permit to be filed include:

- A permit application for a full-scale USF at a location where a pilot-scale facility had previously operated.
- Modifications to the recharge methodology.
- Change of the USF location by more than ¼ mile.
- Modifications that include adding new components that are greater than ¼ mile away from the existing USF.
- Modification to a USF permit for a facility where recharge has not commenced within 5 years of permit issuance or a facility that did commence recharge but has not been operational during the last 10 years.

C. GENERAL INFORMATION

On the application form, the applicant must fill in all information requested in item 1 as that information should appear on the permit. For item 9, insert the requested duration of the permit, not to exceed 20 years. Because conditions at project sites and factors affecting facility operations change over time, facilities warrant close examination at least every 20

years. The permit duration requested on the application form must be supported by the hydrologic modeling analysis.

D. DESIGNATION OF A MANAGED UNDERGROUND STORAGE FACILITY THAT CAN ADD VALUE TO A NATIONAL PARK, NATIONAL MONUMENT, OR STATE PARK

The applicant must indicate on the application if a designation of the facility as a Managed Underground Storage Facility that could add value to a national park, national monument or state park pursuant to A.R.S. § 45-811.01(D) is being sought. If yes, the applicant must complete the USF Permit Application Supplement (see Section II.F.5 on page 8 of this Application Guide for more information). If the Director grants the designation, long-term storage credits may be accrued at the facility for one hundred percent, as opposed to the normal fifty percent, of the recoverable amount of water stored at the facility.

E. SUPPORTING EVIDENCE

1. The Underground Storage Facility Permit Application Report

Section III of this Application Guide describes the evidence an applicant must submit with the application to demonstrate that the USF will satisfy the statutory requirements of A.R.S. § 45-811.01(C). These requirements include a demonstration that the applicant has the technical and financial capability to construct and operate the USF, that the project is hydrologically feasible, and that the project will not cause unreasonable harm. An applicant must also submit evidence demonstrating legal access to the USF site.

2. Permit Modifications or Renewals

An applicant may apply for multiple types of modifications and/or a renewal on one application. Modifications that do not include a renewal request are only subject to those statutory requirements listed in A.R.S. § 45-811.01(C) that apply to the modification. The applicant must establish which statutory requirements are affected by the proposed modification to determine what evidence to submit to demonstrate continued compliance with the requirements of A.R.S. § 45-811.01(C). The Department recommends using Section III of this Application Guide for direction.

For renewal applications, all the requirements of A.R.S. § 45-811.01(C) must be addressed. Note that if the applicant has monitored, reported, and operated within all terms and conditions of the existing USF permit and the renewal does not include a modification, the Department will consider the technical and financial capability requirements to be met.

F. OTHER FORMS/PERMITS THAT MAY BE REQUIRED

1. Aquifer Protection Permit (APP)

An APP must be obtained from the Arizona Department of Environmental Quality for non-CAP water storage projects. The application must be filed with the Arizona Department of Environmental Quality (ADEQ) before a USF permit application can be determined complete and correct. A.R.S. Titles 45 and 49 recognize different permitting procedures for USF permits depending on whether the source water includes effluent. Provisions of A.R.S. § 49-250(12) and (13) exempt USFs using CAP and certain other non-effluent waters from the requirement to obtain an APP if an operating permit is secured under A.R.S. Title 45. Thus,

depending on the facility's source water type, the discharge may or may not require an APP issued by ADEQ. If the source water subjects the facility to APP requirements, the APP must be obtained prior to any water storage at the USF. Please contact the Water Permit Section of the Water Quality Division at ADEQ for further information.

2. Notice of Intent (NOI) to Drill, Deepen, Replace, or Modify a Well (Form 55-40)

Form 55-40 must be submitted to the Department prior to drilling, replacing, or modifying recharge wells associated with a USF project (e.g. injection, aquifer storage and recovery, or vadose zone wells).

3. Notice of Intent (NOI) to Drill, Deepen, or Modify a Monitor/Piezometer/ Environmental Well (Form 55-44A)

Form 55-44A must be submitted to the Department prior to drilling new or modifying existing monitor wells associated with a recharge project.

4. Pump Installation Completion Report (Form 55-56)

Form 55-56 must be filed with the Department 30 days after installation of pumping equipment in a well, in accordance with A.R.S. § 45-600(B).

5. USF Permit Application Supplement to designate a Managed Underground Storage Facility as one that could add value to a National Park, National Monument, or State Park

An applicant for a managed USF permit where effluent will be stored may request that the Director designate the facility, pursuant to A.R.S. § 45-811.01(D), as one that could add value to a national park, national monument or state park by completing the "USF Permit Application Supplement" (see Appendix B of this Application Guide for a sample copy). Application forms are available from the Recharge Coordinator and at AMA offices or they may be printed from www.azwater.gov/recharge. Additional information and evidence to support this request must be submitted with the application as described on the USF Permit Application Supplement form, including the following:

- Evidence that the facility will benefit the groundwater basin as a whole.
- Evidence of the annual quantity of water to be discharged that will be consumptively used by the park/monument and the annual quantity of water that will be eligible for long-term storage credits.
- A description of the national park, national monument or state park and how it will benefit from the facility.
- Evidence that the water could have been used or disposed of by the storer by means other than discharging the effluent into the stream.

SECTION III – USF PERMIT APPLICATION REPORT

An entity submitting an application to the Department for a USF permit must also submit a report containing information demonstrating that the criteria for issuance of a USF permit in A.R.S. § 45-811.01(C) have been met. This section provides guidance for preparing the report and is based on the substantive policy statement issued by the Department on December 10, 2002 entitled "Underground Water Storage Permit Application Guidance - Technical and Financial Capability and Unreasonable Harm and Hydrologic Feasibility," which may be found at www.azwater.gov/recharge.

The report must contain information as noted below. If the applicant believes that information required by the Department is not applicable (or that alternative methods would be more appropriate for the project), a narrative must be provided explaining why the information should not be required. The Department recommends that the applicant request a pre-application meeting to discuss the proposed USF permit application and to explain any requested or alternative information or methodology.

A. EXECUTIVE SUMMARY

Provide an executive summary containing a brief description of the recharge project, including project objectives, site characteristics, facility components, and conclusions of the unreasonable harm and hydrologic feasibility analyses.

B. USF SITE AND FACILITY CHARACTERISTICS

1. USF Site Characteristics

The report must contain a narrative description and maps of the site where the proposed USF will be located that include the following:

a. Narrative Description

Physical characteristics of the proposed facility location, such as the topography, identification of the groundwater basin/sub-basin, earth fissures, local and regional subsidence, and any unique physical characteristics of the recharge site.

b. Regional Map

- North arrow, scale, and Township, Range and Section lines (preferably on a USGS topographic map of appropriate scale)
- Land elevation contours
- Highways
- Clearly identified USF location
- Boundaries of hard rock, AMAs, and groundwater basins/sub-basins
- Major surface water drainages
- Any other unique regional features

c. Local Site Map (within one mile of the facility)

- North arrow, scale, and Township, Range and Section lines
- Facility boundary
- Major streets

- Surface water and irrigation features such as lakes, canals, etc.
- Other local features to provide clarity for the USF site

2. Facility Characteristics

a. Description of Facility

The report must contain a facility description that includes the following, where applicable:

i. Description of Wells

- A table of all recharge, monitor, and piezometer wells that are part of the facility. The table must contain the use of the well, the ADWR 55 well registration number, cadastral location, unique identifier, construction information, surveyed wellhead elevation, method of water level measurement, and an indication of whether the well has a dedicated pump
- Schematics for new wells and as-built diagrams for existing wells, including both construction details and an indication of the static water level in the well
- Evidence that all wells will receive or have received authorization to drill via a Notice of Intent or a Non-exempt Well Permit from ADWR

ii. Description of Recharge Basins

- A table listing all basins and delineated divisions within those basins (as applicable)
- Acreage of each recharge basin and each division
- Design schematics, engineered drawings, or as-built drawings of basins showing all associated recharge components and construction details
- Maximum depth of water
- Evidence that the basins are designed and protected against storm water runoff
- Evidence that the basins are designed to protect against basin overflow or breaching

iii. Description of Trenches

- Number of trenches and acreage of each trench network
- Design schematics, engineered drawings, or as-built drawings of trenches showing all associated recharge components and construction details

iv. Description of Managed and Constructed In-channel Recharge

- Facility length (in miles), predicted length of surface flow, and flow measurement points with cadastral locations
- Major surface water and tributary flow into the facility
- Man-made discharges or diversions into or from the facility
- Other unique design features of the in-channel facility

b. Multiple Use Projects

If any of the above designs will incorporate other uses besides recharge, the report must include a description of the non-recharge design components of the facility, including:

- Supporting evidence that recharge will remain a principal purpose of the facility
- How the other uses are associated with the recharge facility and its overall design
- How the other uses affect the overall ability of the recharge facility to allow water to infiltrate
- Consumptive and non-consumptive water uses associated with the other uses
- Design features of the other uses, including conveyance and delivery systems
- An estimate of the annual consumptive use and losses associated with the other uses
- How the other uses will affect access to the recharge portion of the facility for maintenance

c. Description of Source Water and Delivery System

The report must contain a description of the source water and the source water delivery system. Include a narrative describing the seasonal variability in source water availability and a description of how the delivery system is designed to deliver the requested recharge volume of each type of source water. If the delivery system is designed for a lesser volume than the requested recharge volume, also include the following:

- An explanation of why the larger volume is being requested
- A description of the infrastructure to be constructed to deliver the larger volume
- The expected date by which the infrastructure will be in place and recharge of the full volume will commence

d. Facility Map

The report must contain a facility map showing on-site details that includes the following:

- Township, Range and Section lines, the recharge facility, and all facility design components (including all monitoring points)
- Labeled unique identifiers for each facility component
- Conveyance system layout, including all facility water inflow and outflow points

e. Description of Design Contingencies

The report must contain a detailed description of all design contingencies. For all contingencies, include the following:

- A table listing any contingencies
- A narrative detailing the contingencies and explaining how the proposed contingencies will affect the overall project
- A map (including the Township, Range, and Sections lines) showing the location of any facility contingencies
- Design schematics or engineered drawings of any contingency designs

Please be aware that any design change that is not described in detail in the application and included as a permit condition may require a permit modification, including fees and public notice.

3. Geology

The report must contain a description of the geologic characteristics at the site of the proposed USF and surrounding area that include the following:

- A description of subsurface geology with supporting cross-section diagrams and narratives, a description of any known areas of subsurface fine grain units or potential perching units that may impede recharge, and all citations and supporting materials
- A summary of any reasonably available geologic logs, including well driller logs, for activities that were conducted within one mile of the proposed USF
- Copies of any geophysical logs and boring logs that were specifically used to support the USF application

4. Hydrogeology

a. Description of Hydrogeology and Aquifer Characteristics

The report must contain a hydrogeologic description of the aquifer characteristics at the site of the proposed USF and supporting material as follows:

- Evidence that there is an aquifer underlying the recharge site and that the recharge will add water to the aquifer
- A general description of the aquifer, including the vertical and horizontal extent, thickness, lithology, and specific aquifer units
- Aquifer parameters representative of current conditions in the general area and at the storage location according to the best available data. If data demonstrates a wide range of aquifer parameters at the site of the USF, the applicant must use either a median or geometric mean of those parameters, as appropriate. All citations for the aquifer parameters must be provided.

b. Description of the Vadose Zone

The report must contain a description of the vadose zone (including citations) at the recharge site that includes the following:

- Thickness and the vertical and horizontal extent of the vadose zone
- Lithologic description of the vadose zone
- Identification of potential perching units in the vadose zone and a description of how they will affect the movement of recharge waters downward through the vadose zone

c. Description and Map of Current Water Levels

The report must contain a description (including citations) and map of current water levels for both depth-to-water below land surface and elevation of the water table above mean sea level within the maximum area of impact (as described on page 13, Section III.C.1.a of this Application Guide) of the proposed USF. The map (similar to those developed to depict site characteristics) must include the following:

- Labeled equipotential contours
- Well points used with associated depth to water and elevation
- Groundwater flow direction arrows

d. Description of Water Level Changes

The report must contain a description of current and historic water level changes within the maximum area of impact of the proposed USF with representative hydrographs and a discussion of possible causes of any recent changes.

C. UNREASONABLE HARM AND HYDROLOGIC FEASIBILITY ANALYSIS

1. Procedure for Calculating Maximum Area of Impact and Mounding Analysis

The applicant must calculate the maximum area of impact of the USF as the areal extent of a one-foot rise in the water level from the storage of the maximum amount of water at the proposed USF and must show this area on a map. Any water level rise of less than one foot is considered negligible and may be excluded from the area of impact. The applicant must also conduct a mounding analysis of the maximum water storage volume at the proposed USF including a graph of the anticipated rate of groundwater rise over the duration of the permit and a description of why the project is hydrologically feasible.

a. Calculating the Maximum Area of Impact and Mounding of Groundwater

To calculate the maximum area of impact and mounding of groundwater at and around the proposed USF, the applicant must do the following:

- Perform the analysis using a technique that groundwater scientists practicing in Arizona would find appropriate, taking into consideration the method of recharge, scale, scope, and the hydrologic characteristics of the proposed site. The Department strongly recommends that the applicant request a pre-application meeting to discuss the appropriateness of the technique selected for use in the analysis. The USGS's MODFLOW program is considered an industry standard by the Department. In most settings, this modeling technique is an appropriate tool for determining the impact of the proposed USF.
- Use the maximum amount of water to be stored for the duration of the permit as requested in the application (annual storage multiplied by the requested years of permit duration) and assume that no stored water from the proposed USF will be recovered from within the area of impact during the proposed duration of the USF permit. Except that if the applicant has agreed to accept a permit condition that limits the amount of water that may be in storage at any one time, the applicant may use this smaller volume to calculate the maximum area of impact.
- Assume that groundwater pumping and recovery of stored water in the area will continue at current levels, unless there is clear evidence of likely future changes in the withdrawal regime.
- Use aquifer parameters as discussed on page 12, Section III.B.4.a (third bullet) of this Application Guide.
- Consider the effects of any ongoing or likely water storage at USFs that have been permitted at the time the application is filed and that have a maximum area of impact that overlaps or is within the maximum area of impact of the proposed USF (the applicant may request information on the maximum area of impact from existing USFs from the Department).
- Consider the effects of any natural and incidental recharge and natural inflows and outflows in the area of the proposed USF.
- Include and describe appropriate aquifer boundary conditions in the calculations.
- Include localized and regional groundwater level trends (as discussed on pages 12

and 13, Sections III.B.4.c and III.B.4.d of this Application Guide) in the model or, if the groundwater level trends are not input, the applicant must discuss localized and regional groundwater level trends in a narrative, including the impact of those trends on storage capacity in the aquifer.

b. Map of One-Foot Water Level Rise

On a map of the one-foot rise in water level from the storage of the maximum amount of water at the proposed USF, include the following:

- Township, Range, and Section lines
- The proposed USF perimeter
- Other USFs used in the maximum AOI calculation
- Aquifer boundaries
- Inflow and outflow boundaries

c. Narrative Supporting Maximum Area of Impact and Mounding Analysis

To support the maximum area of impact analysis and mounding effects, the applicant must submit a narrative describing:

- The technique(s) used to conduct the analysis and why that technique was appropriate for the method of recharge to be employed at the USF (considering the scale and scope of the USF and the hydrogeologic characteristics of the proposed site)
- The parameters, assumptions, and water infiltration and/or injection rates used in the analysis, with justification and citations (*e.g.*, a table listing what was used in the analysis)
- Any evidence referenced in the narrative
- A digital copy of all model inputs and outputs, including calculation results
- If a numerical technique is used, a discussion of the calibration (if appropriate, it is suggested to include an analysis of measured versus modeled results) and sensitivity analysis of the model

2. Land and Water Use Inventory

a. Inventory of Wells

The applicant must provide a table and description of use of any reasonably discoverable wells within one mile of the proposed USF. Include a map with clearly marked Township, Range and Section lines and other prominent landmarks depicting the location and use of each well. The table must include the ADWR 55 well registration number, use of well, owner of well, most recent static water level and screened interval, if known, and all sources of information.

b. Inventory of Structures, Land Uses, Conditions, and Facilities

The applicant must provide a narrative describing all structures, land uses, conditions, and facilities that are likely to be impacted by rising water levels within the maximum area of impact in areas not held by the applicant. These must be provided if they are known to the applicant or could be known to the applicant through reasonable effort.

The applicant must provide a list and map of the land and water uses within the maximum area of impact in areas not held by the applicant, if they are known to the applicant or could

be known to the applicant using reasonable effort. The list must include the cadastral location and the estimated or known depth of each structure, a description of the land or water use, and any other pertinent information. The map must include Township, Range and Section lines. The list and map must indicate the following, as applicable:

- Structures that extend greater than 10 feet below land surface that are likely to be impacted by rising water levels after storing the maximum amount of water that could be in storage at any one time. For the purposes of this item, wells are not structures.
- Active sand and gravel and mineral extraction operations that are likely to be impacted by rising water levels after the storage of the maximum amount of water that could be in storage at any one time
- Any permitted storage facilities for which the maximum area of impact overlaps or is within the maximum area of impact of the proposed USF
- Any wastewater treatment facilities, active agricultural land, industries with high hazard ratings, buried waste or soil contamination, septic leach fields or seepage pits, rapid infiltration basins, cemeteries, aqueducts, rivers, streams, landfills, air transportation facilities, and any other land uses, conditions and facilities that are likely to be impacted by rising water levels after storing the maximum amount of water that could be in storage at any one time
- A description and characterization of wastes, contaminated soils, or other materials that are in the vadose zone that may pollute groundwater as a result of recharge operations
- The location, and extent of known areas of groundwater contamination, including sites identified by UST, RCRA, CERCLA, WQARF, or the Voluntary Remediation Programs

c. Description of Inventory Methods Used

The applicant must provide a description of the actions taken to identify structures, land uses, conditions, facilities and water users.

3. Water Quality

If water storage at the USF will not be governed by an aquifer protection permit issued by the Arizona Department of Environmental Quality, the Director of Environmental Quality must find that "the facility is not in a location that will promote either the migration of a contaminant plume or the migration of a poor quality groundwater area so as to cause unreasonable harm or is not in a location that will result in pollutants being leached to the groundwater table so as to cause unreasonable harm." A.R.S. § 45-811.01(C)(5). In addition, the applicant must submit documentation of the ambient groundwater quality of the receiving aquifer, including organic and inorganic constituents and documentation of the type and quality of the water to be stored, including all of the following (as applicable):

- Physical parameters, major cations and anions, inorganic chemicals, trace metals, organic chemicals, herbicides and pesticides, and microbiological constituents of the source water
- Any anticipated variations in the quality of the source water
- Any treatment processes to be applied to the source water

If an Aquifer Protection Permit (APP) will govern water storage at the proposed USF, the applicant must provide evidence the permit has been issued or an application for the permit has been filed.

4. Unreasonable Harm Analysis

The applicant must establish that storage of the maximum amount of water that could be in storage at any one time will not cause unreasonable harm to the land or other water users that were identified in Section III.C.2.b (page 14) of this Application Guide. Note that impacts to land held by the applicant are not considered unreasonable harm. In order to demonstrate that the facility will not cause unreasonable harm, the applicant must submit the following:

- An explanation of how the USF will be designed, constructed, and operated to ensure that storage of the maximum amount of water that could be in storage at any one time will not impair existing uses of land, or the structural integrity or function of existing structures, within the maximum area of impact. Potentially impacted land uses and structures within the maximum area of impact are those identified on pages 14 and 15, Section III.C.2.b of this Application Guide.
- A statement that the water storage at the USF will be governed by an aquifer protection permit or an explanation of how the USF will be designed, constructed, and operated so that it will not cause or contribute to a violation of state aquifer water quality standards. If the aquifer already violates the state aquifer water quality standards, the applicant must explain how the USF will be designed, constructed, and operated so that water storage will not cause or contribute to further degradation of the aquifer.

5. Hydrologic Feasibility Conclusions

The applicant must provide a narrative description of the hydrogeology of the proposed site to show that there are no insurmountable barriers to recharge and that storage of the maximum amount of water that could be in storage at any one time is hydrologically feasible. The following must be included:

- Evidence that the facility will be designed, maintained, monitored, and operated for optimal recharge efficiency
- A narrative addressing the potential for stored water to rise to land surface, including day-lighting (water expressed at land surface) of stored water, and if the water is to be stored in an Active Management Area (AMA), the potential for the water to exit the AMA
- Demonstration that the maximum amount of water that could be in storage at any one time can be stored underground without reaching the Operation Prohibition Limits set forth in the monitoring plan (below)
- Evidence that the proposed USF will be designed, constructed, monitored, and operated in accordance with principles generally accepted by groundwater scientists practicing in Arizona to ensure effective underground storage of water
- A narrative showing the method(s) used to determine the infiltration rate or injection rate for the proposed project, the range of estimated infiltration rates in feet/day, and an analysis showing that the infiltration rate or injection rate used will support the proposed recharge volume.

6. Monitoring Plan

a. Monitoring Plan Design

The applicant must submit a monitoring plan designed to adequately monitor impacts from the proposed USF. The monitoring plan must include the following:

- A sufficient number of monitor wells and piezometers to assess water levels and vadose zone perching conditions
- A sufficient number of monitor wells to assess groundwater quality
- At least one monitoring point to assess source water quality
- Planned frequency of measurements
- A separate table listing proposed water quality sampling parameters, analytical methods, and frequency of sampling

b. Monitor Point Locations and Measurements

The applicant must provide the locations from which water levels and water quality (both source water and groundwater) will be measured and a description of the manner and frequency in which the measurements will be taken to establish that the USF will not cause unreasonable harm. At a minimum, monitoring must comply with the following at each monitoring point:

i. Water Levels

For a project sited in an area with ten or more structures not held by the applicant that are located within a quarter mile radius of the USF, water levels must be measured at least every two weeks. This frequency must be maintained until such a time that the USF has commenced recharge and operated for a period of twelve consecutive months during which there were less than two instances of the alert levels having been reached. After this twelve-month period, water levels must be measured at least once each month.

For a project sited in an area with fewer than ten structures not held by the applicant that are located within a quarter mile radius of the USF, water levels must be measured at least once each month.

To determine the quarter mile radius of the USF, the applicant must use the edge of the individual basin, trench, stream channel, or well as the boundary of the USF. If a USF contains multiple basins, trenches, or wells, individual radii must be drawn around each feature. If there are more than ten structures within the combined radii, water levels must be measured at least every two weeks.

ii. Water Quality

If an APP does not govern water quality, the groundwater quality must be sampled at least every three months until such time that the USF has been operated for a period of twelve consecutive months during which there were no instances of any aquifer water quality standard being exceeded or any alert level being reached. After this twelve-month period, water quality must be sampled at least every six months. Source water quality sampling frequency must be tailored to the variability expected in the source water. Source water must be sampled at least every three months until such time that the USF has been operated for a period of twelve consecutive months during which there were no instances of any aquifer water quality standard being exceeded or any alert level being reached. After this twelve-month period, water quality must be sampled at least every six months.

c. Alert Levels and Operational Prohibition Limits

The monitoring plan must consist of a two-tier system for examining water levels and water

quality. The first tier is the Alert Level (AL), which is an indicator that an initial response action is required to avoid the potential for unreasonable harm. If an AL is reached, the course of action developed and submitted by the applicant must be implemented to prevent water levels from reaching or exceeding the second tier of the monitoring plan.

The second tier is the Operational Prohibition Limit (OPL), which is the level above which the potential for unreasonable harm exists. The recharge activity at the USF must cease if any water level or water quality OPL is reached and recharge activity may not resume until the level drops below the OPL. The applicant must propose the OPLs in accordance with the standards below.

i. Operational Prohibition Limits for Water Levels

The applicant must provide water level OPLs in descriptive and table formats. The OPLs must require that all storage activities cease if the water levels reach the OPL. For constructed and managed USFs, the OPLs must be established to prevent unreasonable harm to structures, land uses, conditions, and facilities that are occurring and ongoing at the time the application is submitted (identified on page 14, Section III.C.2.b of this Application Guide) and must comply with all the following:

- For constructed USFs, OPLs must be established at least 15 feet below land surface in areas not held by the applicant
- For constructed and managed USFs, OPLs must be established at least 5 feet below any structures
- OPLs must be consistent with any federal or state statute, rule, or permit that establishes a maximum water level elevation in the area of the USF

ii. Alert Levels for Water Levels

The applicant must provide water level ALs in descriptive and table formats. ALs must be designated farther below land surface than the OPLs. The applicant must provide the course of action to be taken if water levels reach the ALs. The ALs and course of action must be sufficient to prevent groundwater from reaching the water level OPLs.

iii. Operational Prohibition Limits for Groundwater Quality for Non-APP USFs

If an APP does not govern water quality for the project, the applicant must provide groundwater quality OPLs in descriptive and table formats. All storage activity must cease if either of the following occurs:

- Any aquifer water quality standard is exceeded that may cause an immediate risk to human health or safety
- Ongoing or repeated instances of aquifer water quality standards being exceeded or alert levels being reached that indicate the water storage is causing or will cause a degradation of the quality of the water in the aquifer.

If ambient groundwater quality exceeds state aquifer water quality standards, the OPLs must be set so that there is no further degradation of the quality of the water in the aquifer.

iv. Alert Levels for Groundwater Quality for Non-APP USFs

If an APP does not govern water quality for the project, the applicant must provide ALs for groundwater quality and a course of action that must be undertaken if a water pollutant reaches the AL. The course of action must be sufficient to prevent groundwater from reaching the groundwater quality OPLs.

ALs for groundwater quality are generally established at 80% of state aquifer water quality standards. Except that, if ambient water quality exceeds 80% of state aquifer water quality standards, no alert level is necessary.

v. Operational Prohibition Limits for Source Water Quality for Non-APP USFs

If an APP does not govern water quality for the project, the applicant must provide OPLs for source water quality, established at state aquifer water quality standards. For most basin recharge and other project designs where attenuation will be achieved in the vadose zone, no OPL need be set for turbidity or bacteria in the source water.

The applicant must also provide a course of action that must be undertaken if a water pollutant reaches the OPL. All storage activity must cease if either of the following occurs:

- Any aquifer water quality standard is exceeded that may cause an immediate risk to human health or safety
- Ongoing or repeated instances of aquifer water quality standards being exceeded that indicate the water storage is causing or will cause a degradation of the quality of the water in the aquifer.

No ALs are required for source water.

vi. Action Plan for Water Levels

The applicant must provide the course of action to be taken by the permit holder if a water level AL or OPL is reached including, but not limited to, the following:

- **Within 48 hours of becoming aware of any water level AL or OPL being reached:** Notify the Department of the AL or OPL being reached, followed within two weeks by a detailed report of the incident
- **Daily:** Measure water levels during any period in which a water level AL or OPL has been reached and for two weeks thereafter
- **Weekly:** Report to the Department measurement results during any period in which an AL or OPL for water levels has been reached and continuing for two weeks thereafter

vii. Action Plan for Water Quality

The applicant must provide the course of action to be taken by the permit holder if a source water OPL or groundwater quality AL or OPL is reached including, but not limited to, the following:

- **Within 48 hours of becoming aware of any water quality AL or OPL being reached:** Notify the Department of the AL or OPL being reached,

followed within two weeks by a detailed report of the incident
- **Within five days of becoming aware of any water quality AL or OPL being reached:** Collect a verification sample from the same location and submit it for analysis of the same pollutant(s)
- **Monthly:** Conduct sampling during any period in which a water quality AL or OPL has been reached and continuing until the concentration drops below the AL or OPL
- **Monthly:** Report to the Department sample results during any period in which an AL or OPL for water quality has been reached and continuing for one month thereafter

d. Narrative Justifying Monitoring Plan

The applicant must submit a narrative that justifies the monitoring plan including:

- Modeling that was used to develop the plan
- Locations of the monitor wells and piezometers in relation to those structures, land uses, conditions, and facilities identified on pages 14 and 15, Section III.C.2.b of this Application Guide
- Why the locations of the monitor wells and piezometers were selected
- Why the ALs for water levels were selected
- How the proposed courses of action to be taken if an AL is reached were developed and the reasoning behind them

e. Water Quantity Monitoring

A description of the water quantity monitoring plan must be provided that includes the following (note that all water quantity measuring methods and devices must meet the accuracy standards of A.A.C. R12-18-905 and 906):

- A narrative describing the water quantity monitoring plan, including the measuring of all inflows and outflows to and from the USF
- A table listing the parameter measured, the measuring device used, cadastral location, unique identifier, and the frequency of measurement
- The manufacturer's specification sheet(s) and/or a narrative for each measurement device and methodology

f. Managed and Constructed In-channel Facility Monitoring

Include the following additional items in a monitoring plan for a managed or constructed USF located within a stream channel:

- Measurement points and a plan for measuring the actual flow length during the operation of the facility
- Inflow and outflow source water quantity measurements
- Surface water gage measurement, if applicable
- Evapotranspiration estimation plan
- Storm flow measurement locations into the facility
- Tributary surface water flow measurement locations into the facility
- Photo point monitoring for vegetation growth and facility loss calculations
- Frequency of measurements
- A table listing all items contained in the monitoring plan, including the monitoring point, the parameter measured, the cadastral location, and any other unique feature of the plan

7. Operation and Maintenance

a. Operation and Maintenance Plan

The applicant must submit an operation and maintenance plan to ensure that the storage efficiency of the USF will be maintained. The plan must include the following:

- Maintenance and operational techniques to be used
- Planned maintenance schedule

b. Description of Evaporation and Evapotranspiration

The applicant must provide a description of how evaporation, evapotranspiration, and other losses will be calculated and/or measured. If non-recharge use components are included in the facility design, a description of how associated losses and/or consumptive uses will be quantified must also be included. For calculation of evaporative losses, the Department recommends that the applicant use the method described in "Evaporation From Open Water Surfaces in Arizona", by Keith R. Cooley (1970) using the maximum evaporation curve.

D. TECHNICAL CAPABILITY

The applicant must have the technical expertise to construct and operate the USF. In order for a USF applicant to demonstrate technical expertise, the applicant must submit the following:

- The name and address of the person or persons who will be principally responsible for overseeing the construction and operation of the USF
- Proof of any pertinent licenses or certifications held by that person
- A narrative, resume, biography, or related information describing the person's professional training and work experience that is relevant to the construction and operation of the USF

E. FINANCIAL CAPABILITY

The applicant must have the financial capability to construct and operate the USF.

1. Estimate of Total Cost

In order for a USF permit applicant to demonstrate financial capability, the applicant must submit a statement establishing the total estimated costs for the USF. The statement must include:

- An estimate of all costs related to constructing the facility
- An estimate of the annual operational costs for the USF for each year of the permit duration, including all costs for regulatory compliance and proper maintenance of the facility
- Explanations, summaries, or accountings of information or data relied upon to form the reasonable basis of any assumptions or projections used to calculate the estimated costs
- A statement by the person or persons identified as being principally responsible for overseeing the construction and operation of the USF verifying that the estimated costs are a true and best estimate of the total costs associated with construction and operation of the USF.

2. Evidence for Meeting Costs - Public Entity

A USF permit applicant that is an agency of the United States, an agency of the State of Arizona, a city, town, county, irrigation district, multi-county water conservation district, or other public entity with taxing or public bonding authority must establish it has the ability to meet the total estimated costs for construction and operation of the facility by submitting a sworn statement from the applicant's chief financial officer. This statement must certify that to his or her best knowledge and belief the applicant possesses existing financial resources or adequate taxing or bonding authority to pay the estimated construction and operation costs for the USF, as indicated on the applicant's statement of estimated total costs.

3. Evidence for Meeting Costs - Private Entity

A USF permit applicant that is not an agency of the United States, an agency of the State of Arizona, a city, town, county, irrigation district, multi-county water conservation district, or other public entity with taxing or public bonding authority must establish that it has the ability to meet the estimated total costs for the construction and operation of the facility by submitting at least one of the following:

- A sworn statement from the applicant's chief financial officer certifying that to his or her best knowledge and belief, the applicant possesses the financial ability to pay the estimated operation and construction costs for the USF, as indicated on the statement of estimated total costs
- A loan commitment letter or a revolving credit agreement from a recognized financial institution establishing that the applicant possesses the ability to finance the payment of all estimated construction and operational costs for the USF, as indicated on the applicant's statement of estimated total costs
- Evidence of posting a bond sufficient to meet the estimated construction and operation costs for the USF, as indicated on the applicant's statement of estimated total costs.

Note: If recharge facility components are included as contingencies under Section III.B.2.e (page 11) of this Application Guide, the financial capability information must also include all costs associated with these contingencies.

F. LEGAL ACCESS

In order for an applicant to establish that access to the site has been or can be obtained, one of the following must be submitted:

- A copy of a deed, easement, lease, judgment, license, or other proof that demonstrates that the applicant has legal access to the proposed site for the purposes of constructing and operating a USF
- Evidence that the applicant is in process of obtaining a deed, easement, lease, license, or other proof that allows the applicant legal access to the proposed site for the purpose of constructing and operating a USF
- If the project will be located in part or entirely within the natural channel of a stream, the applicant must note that access to the stream channel is granted under A.R.S. § 45-173. Although access to the site is granted under A.R.S. § 45-173, the applicant must submit land ownership information for the stream channel to satisfy requirements under the unreasonable harm review.

APPENDIX A -- APPLICATION FORM

Application forms are available from the Recharge Coordinator and at AMA offices or they may be printed from www.azwater.gov/recharge

ARIZONA DEPARTMENT OF WATER RESOURCES
Water Management Division
3550 North Central Ave, 2nd Floor
Phoenix, Arizona 85012-2105
Phone (602) 771-8585 Fax (602) 771-8689

APPLICATION FOR UNDERGROUND STORAGE FACILITY PERMIT (A.R.S. § 45-811.01)

APPLICATION FEE $ 750.00 DUE UPON FILING

PERMIT FEE OF $ 500.00, PLUS NOTICE AND PUBLICATION FEES TO BE DETERMINED, WILL BE DUE PRIOR TO ISSUANCE OF PERMIT

PLEASE SUBMIT ONE ORIGINAL AND THREE COPIES OF THE COMPLETED APPLICATION AND ALL SUPPORTING MATERIALS

FOR OFFICE USE ONLY

Application No.: _____

Date Received: _____

FACILITY DESIGN: (check one)

☐ **Constructed**

☐ **Managed**

APPLICATION FOR: (check one)

☐ **Underground Storage Facility (USF)**

☐ **Modification of USF permit no.:**
71-_____

☐ **Renewal of USF permit no.:**
71-_____

GENERAL INFORMATION

1. Name of Applicant: _____

_____
Mailing Address City State Zip

Contact Person: _____Telephone: _____Fax: _____

2. Is this a State Demonstration Project? _____ Yes _____ No
(**NOTE:** Pursuant to A.R.S. § 45-893.01, **only** Conservation Districts qualify to participate in State Demonstration Project program.)

3. Name of Active Management Area or Irrigation Non-Expansion Area where the facility will be located:
_____
(If the facility is NOT located within an AMA or INA, please indicate "NONE.")

4. Name of groundwater basin and subbasin where the facility will be located: _____

_____

5. Legal description of the location of the facility: _____

_____

(quarter/quarter/quarter/section, township and range – see Appendix C of USF Application Guide)

6. Does the applicant own the land where the facility is to be located? _____ Yes _____ No

7. The total design capacity of the facility: _____

(acre-feet to be stored over the duration of the USF permit)

8. The maximum annual amount of water proposed for storage at this facility: _____

(acre-feet per year)

9. Proposed duration of permit: _____

(years)

10. Type of source water to be stored:

☐ CAP Water ☐ Effluent ☐ Decreed and Appropriative Surface Water

If Decreed and Appropriative Surface Water, list river(s): _____

11. I agree under penalty of law to obtain any required floodplain use permit from the county flood control district before beginning any construction activities, as required by A.R.S. § 45-811.01(C)(4).

☐ Agree ☐ Disagree

12. **For managed USFs where effluent will be stored only:** Are you requesting that this facility be designated as a facility that could add value a national park, national monument or state park, as described in A.R.S. § 45-811.01(D)? ☐ Yes ☐ No

If yes, please submit a completed USF Permit Application Supplement to designate a Managed Underground Storage Facility as one that could add value to a national park, national monument, or state park and all additional information as described on the USF Permit Application Supplement.

13. **For permit modifications only**, give a brief description of the modification(s) requested by this application: _____

_____

_____

SUPPORTING EVIDENCE

Check the following items that have been included with this submittal. For a new USF application, all items **must** be submitted prior to receiving a complete and correct determination by the Department. For a modification to an existing USF permit, submit only those items that apply to the modification. For a full description of these requirements refer to the USF Application Report in the USF Application Guide.

14. USF Site and Facility Characteristics:

☐ Site Characteristics ☐ Geology

☐ Facility Characteristics ☐ Hydrogeology

15. Unreasonable Harm and Hydrologic Feasibility Analysis:

☐ Procedures and Results for Calculating Maximum Area of Impact and Mounding Analysis

☐ Land and Water Use Inventory ☐ Unreasonable Harm Analysis ☐ Monitoring Plan

☐ Water Quality ☐ Hydrologic Feasibility Conclusions ☐ Operation and Maintenance

16. Legal Requirements:

☐ Technical Capability ☐ Financial Capability ☐ Legal Access

NOTARIZED SIGNATURE

I (We),_____, the applicant(s) named in this application, do hereby certify under the penalty of perjury, that the information contained and statements made herein are to the best of my (our) knowledge and belief true, correct and complete.

_____ _____

Telephone Signature of owner or authorized agent

_____

Title

_____

Mailing Address City State Zip

STATE OF ARIZONA)

) ss.

County of_____)

Subscribed and sworn to before me this_____ day of _____, 20_____

_____

Notary Public

_____

My commission expires

APPENDIX B – USF PERMIT APPLICATION SUPPLEMENT

Application forms are available from the Recharge Coordinator and at AMA offices or they may be printed from www.azwater.gov/recharge

ARIZONA DEPARTMENT OF WATER RESOURCES
Water Management Division
3550 North Central Ave, 2nd Floor
Phoenix, Arizona 85012-2105
Phone (602) 771-8585 Fax (602) 771-8689

USF PERMIT APPLICATION SUPPLEMENT TO DESIGNATE A MANAGED UNDERGROUND STORAGE FACILITY AS ONE THAT COULD ADD VALUE TO A NATIONAL PARK, NATIONAL MONUMENT, OR STATE PARK (A.R.S. § 45-811.01(D)).

TO BE SUBMITTED IN CONJUNCTION WITH AN APPLICATION FOR AN UNDERGROUND STORAGE FACILITY, INCLUDING APPLICATION FEES, WHICH ARE DUE UPON FILING.

FOR OFFICE USE ONLY

Application No.: _____

Date Received: _____

GENERAL INFORMATION

1. Name of Applicant: _____

2. Name of Managed Underground Storage Facility: _____

3. The quantified minimum base flow, in acre-feet, that will be maintained in the stream: _____

4. The annual discharge to the stream, in acre-feet: _____

5. Does the applicant agree to maintain the above identified volumes of base flow and annual discharge to the stream for the duration of the permit? ☐Yes ☐ No

SUPPORTING EVIDENCE

Check the following items that have been included with this submittal. All items **must** be submitted prior to receiving a determination by the Department on this request.

- ☐ Evidence that the facility will benefit the groundwater basin as a whole.
- ☐ Evidence of the annual quantity of water to be discharged that will be consumptively used by the park/monument and the annual quantity of water that will be eligible for long-term storage credits.
- ☐ A description of the national park, national monument or state park and how it will benefit from the facility.
- ☐ Evidence that the water could have been used or disposed of by the storer by means other than discharging the effluent into the stream.

I (We), _____, the applicant(s) named in this application, do hereby certify, under the penalty of perjury, that the information contained and the statements made herein are to the best of my (our) knowledge and belief, correct, and complete.

_____ _____

Telephone **Signature of owner or authorized agent**

_____

Title

Legal Description of Well Location

The terms *cadastral location* and *legal description* both refer to a method of locating land according to a rectangular coordinate system commonly known as the Public Lands Survey. Much of Arizona has been mapped according to this system. The initial point of reference was arbitrarily chosen as the confluence of the Gila and Salt Rivers. From this initial point, a north-south *meridian*, and an east-west *baseline*, divide the state into four unequal **quadrants** (A, B, C, D). (Baseline Road in Phoenix is named for our state's baseline. See the map below.)

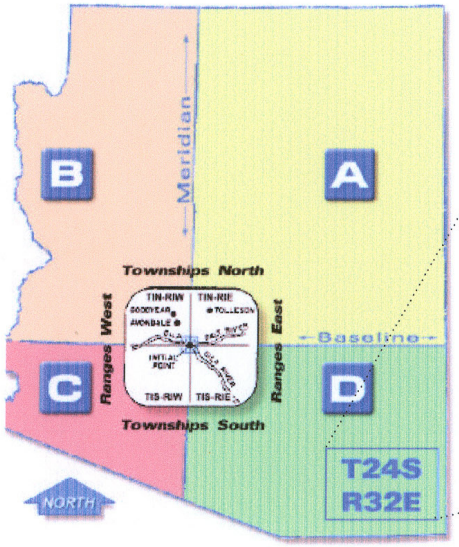
Each quadrant was surveyed and subdivided into congressional *townships*, with each square-shaped township typically six miles on each side, or 36 square miles in all. (Not all townships are exactly the same size due to landform variations and the curvature of the earth.) Beginning at the initial point and the number 1, each township is designated as being so many six-mile units – called **Townships** (capital T) – north or south of the baseline, and so many six-mile units – called **Ranges** – east or west of the meridian. The Township and Range together define a particular township.

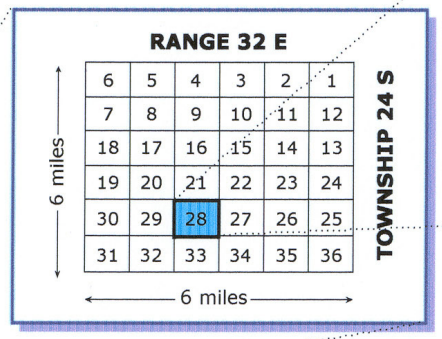
Each township is divided into 36 equal parts called **sections.** Each section is approximately one square mile, about 640 acres. Each 640-acre section can be subdivided into four 160-acre quarters. Each 160-acre quarter is further subdivided into four 40-acre quarters, and each 40-acre quarter is further subdivided into four 10-acre quarters. Each 160-, 40- and 10-acre quarter is designated as the northeast, northwest, southwest, or southeast quarter (a, b, c, d respectively).

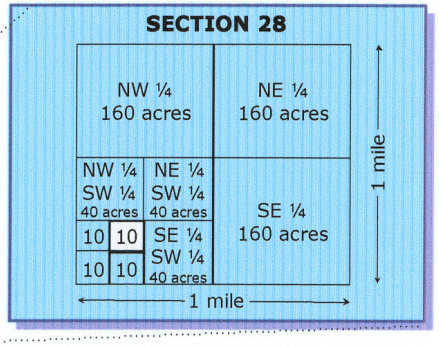
In the example here, the property for a well is in the southeastern-most township in the state, 24 townships south of the baseline, and 32 ranges east of the meridian, i.e., **T24S, R32E**. Within this township, the property lies in Section 28. The 10-acre white area where the well is located is in the southwest 160-acre quarter, then the southwest 40-acre quarter, and finally, the northeast 10-acre quarter. The legal description would be written as follows:

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
24S	32E	28	SW ¼	SW ¼	NE ¼

The cadastral location would be written as follows: **D (24-32) 28 cca**







Township and Range data can be found on U.S. Geological Survey maps, and many metropolitan street atlases.

APPENDIX D -- UNDERGROUND WATER STORAGE, SAVINGS AND REPLENISHMENT PROGRAM CONTACTS

Phoenix AMA ADWR 3550 North Central Ave 2nd Floor Phoenix, AZ 85012 602-771-8585	**Pinal AMA** ADWR 1729 North Trekell Road Suite 105 Casa Grande, AZ 85222 520-836-4857	**Prescott AMA** ADWR 2200 East Hillsdale Road Prescott, AZ 86301 928-778-7202

Santa Cruz AMA ADWR 857 West Bell Road Suite 3 Nogales, AZ 85621 520-761-1814	**Tucson AMA** ADWR 400 West Congress St Suite 518 Tucson, AZ 85701 520-770-3800

To obtain application forms, additional Application Guides, information on filing an application or to schedule a meeting contact:

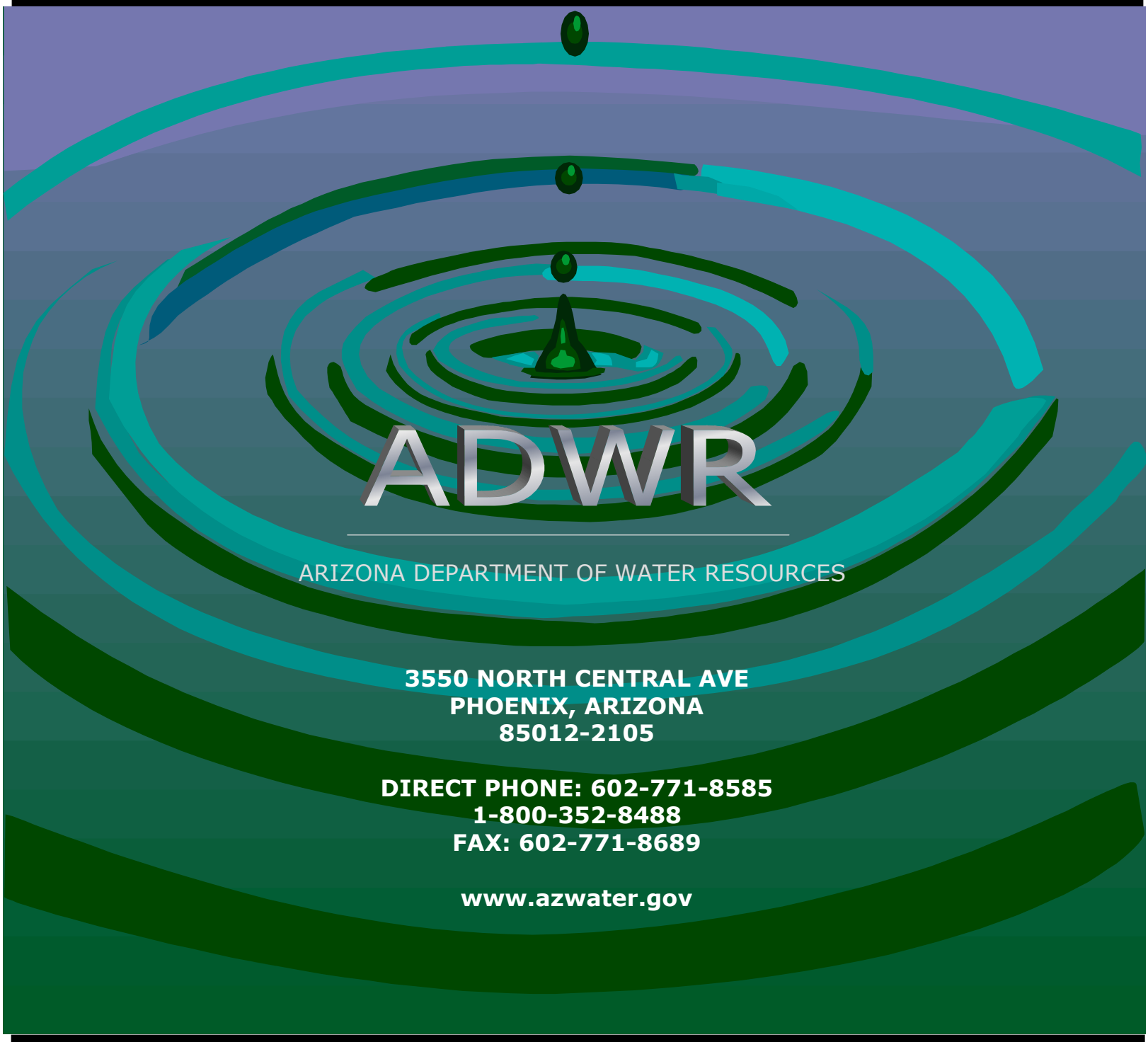
Recharge Coordinator
Water Management Division
Arizona Department of Water Resources
3550 North Central Ave
Phoenix, AZ 85012
602-771-8585
Or visit our website at: www.azwater.gov/recharge

For specific technical questions contact:

Hydrology Division
Arizona Department of Water Resources
3550 North Central Ave
Phoenix, AZ 85012
602-771-8535

For questions related to an Aquifer Protection Permit (if required) contact:

Wastewater, Recharge and Reuse Unit
Arizona Department of Environmental Quality
1110 West Washington Street, 5415B-3
Phoenix, AZ 85007
602-771-4683



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www.azwater.gov

This brochure focuses on the methods and criteria for obtaining a new, or modifying or renewing an existing, Underground Storage Facility Permit.

Information on obtaining a new, or modifying or renewing an existing, Water Storage Permit or conveying an Underground Storage Facility, Groundwater Savings Facility or Water Storage Permit to a new owner may be found in companion brochures.